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Two New Oribatid Mites of the Family Malaconothridae in Wakayama Prefecture, Central Japan (Acari: Oribatei)

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山本佳範[1)]：和歌山県におけるササラダニ類，コナダニモドキ科の2新種

Abstract Two new species belonging to the genera *Malaconothrus* BERLESE, 1904 and *Trimalaconothrus* BERLESE, 1916 were described from surface soil and moss in Wakayama Prefecture. *Malaconothrus kiiensis* sp. nov. is very similar to *Malaconothrus yamamotoi* AOKI, 1994 from Central Japan and *Malaconothrus variosetosus* HAMMER, 1971 from Fiji, but is distinguishable from them by large body size, barbed lamellar seta and long lamellar and interlamellar setae. *Trimalaconothrus magnilamellatus* sp. nov. is similar to *Trimalaconothrus australis* HAMMER, 1958 from South America in having conspicuously developed S-shaped lamellar ridges, but is distinguishable from the latter by small body size, long notogastral setae c_1 and c_2, partly barbed notogastral setae, barbed epimeral setae and eight genital setae.

Three species of the genus *Malaconothrus* and eight species of the genus *Trimalaconothrus* belonging to the family Malaconothridae have been reported from Japan. The present paper deals with two additional new species, *Malaconothrus kiiensis* sp. nov. and *Trimalaconothrus magnilamellatus* sp. nov., which were collected from wet surface soil and wet moss in an evergreen broad-leaved forest at Kii Peninsula, in Wakayama Prefecture, Central Japan.

Malaconothrus kiiensis sp. nov.

(Figs. 1-8)

Measurement: Body length 405 (447) 470 μm; width 195 (224) 255 μm.

Prodorsum: Rostrum narrow and rounded anteriorly. Pedotectum I well marked, strongly projecting and pointed. Lamellar ridge inconspicuous. A weak transverse ridge situated just behind interlamellar setae. Rostral seta thick, long, twisted and strongly barbed. The tip suddenly attenuating. Lamellar seta and exobothridial seta barbed. Interlamellar seta smooth and thin. Relative lengths and mutual distances of prodorsal setae as follows: $le \geqq in > ro > ex$; $ro > (ro\text{-}ro)$; $le > (le\text{-}le)$; $in \fallingdotseq (in\text{-}in)$; $ex < (ex\text{-}ex)$. Some light spots found between interlamellar setae. Integument of prodorsum showing a fine network.

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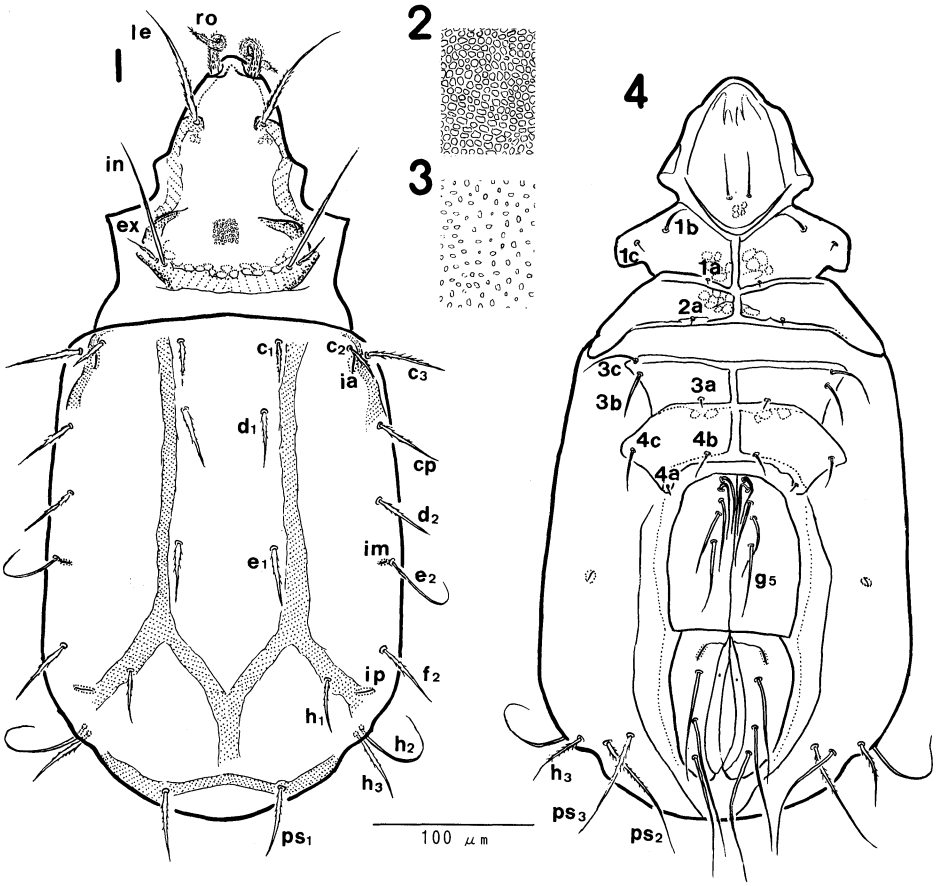
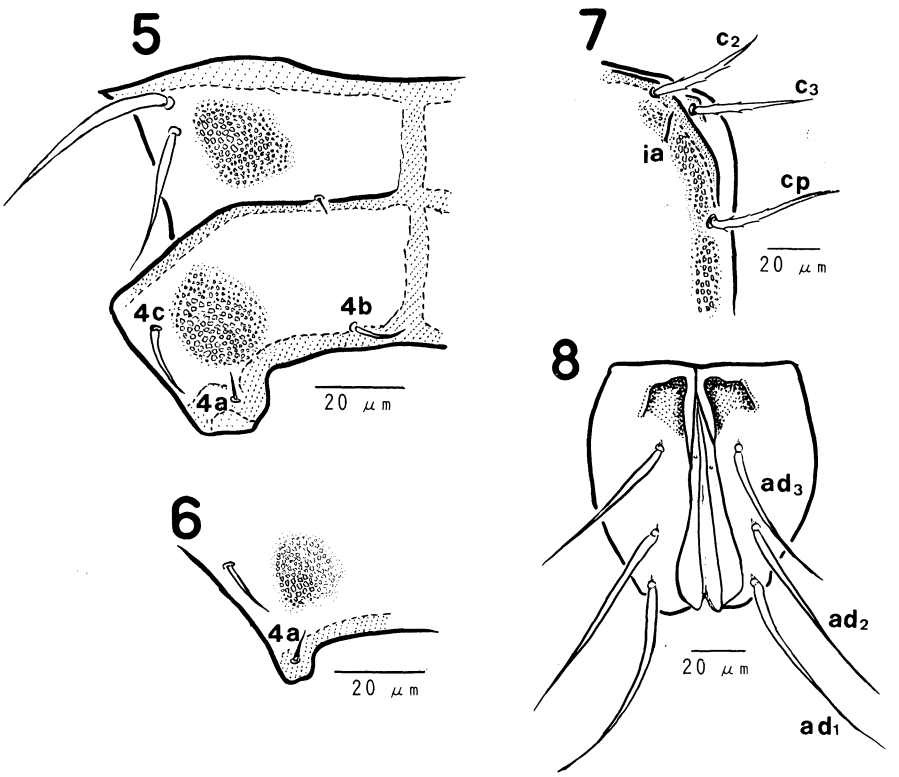


Figs. 1–4. *Malaconothrus kiiensis* sp. nov. —— 1. Dorsal view. 2. Integument of prodorsum and lateral margin of notogaster. 3. Median part of notogastral integument. 4. Ventral view.

Notogaster: Shield-shaped; anterior margin of notogaster straight; lateral margins almost parallel. Notogastral setae c_1, c_2, c_3, *cp*, d_1, d_2, e_1, f_2, h_1, h_3, ps_1 and ps_3 barbed; the other setae e_2, h_2 and ps_2 smooth and thin. Relative lengths and mutual distances of notogastral setae as follows: $ps_2 = h_2 \geqq ps_3 > e_2 > c_3 > h_3 > cp = f_1 = ps_1 > d_2 > d_1 = e_1 = h_1 > c_1 = c_2$; $(h_1\text{-}h_1) > (e_1\text{-}e_1) \fallingdotseq (c_1\text{-}c_1) > (d_1\text{-}d_1)$; $(h_1\text{-}h_1) \geqq 2 \times (c_1\text{-}c_1)$. Notogaster provided with some distinct dorsal ridges; the short lateral ridges situated in humeral part on each side, starting from between setae c_2 and c_3, running posteriorly toward seta *cp*; the median ridges parallel, running along and just outside setae c_1, d_1, and e_1, bifurcating posteriorly, partly extending lateroposteriorly including seta h_1 and lyrifissur *ip*, partly extending medioposteriorly and uniting, medially to form a Y-shaped ridge; the posterior transverse ridge weakly undulating and bearing setae ps_1. Integument of notogaster finely foveolate.

Ventral side: Anogenital chaetotaxy 5-0-1-3. Genital plate provided with 5



Figs. 5–8. *Malaconothrus kiiensis* sp. nov. —— 5. Epimerata III and IV. 6. Variation of edge of epimeron IV. 7. Anterolateral part of notogaster. 8. Anal plate.

smooth and long setae; distance of them as follows: $(g_1-g_2)\fallingdotseq(g_2-g_3)\leqq(g_3-g_4)<(g_4-g_5)$: $(g_4-g_5)=2.3\times(g_1-g_2)$. Anal plate provided with 1 minute hardly visible seta situated at the level of ad_3. Adanal plate provided with 3 long setae. Setal formula of epimerata: 3-1-3-3; all epimeral seta smooth, thin and variable in length; *3b* and *3c* longest, *1b, 4b* and *4c* moderately long and the remainder very minute. Some light spots found on median part of epimera I and II. Integument of epimera partly small network.

Material examined: Holotype (NSMT-Ac 10727) and 5 paratypes (NSMT-Ac 10728-10732), wet surface soil from an evergreen broad-leaved forest (*Quercus salicina, Myrsineseguinii*, etc.), near the bottom of Kotonotaki Waterfall in Susami-cho, Wakayama Prefecture. 26-X-1992. Y. YAMAMOTO. The holotype and 5 paratypes are deposited in the collection of National Science Museum, Tokyo.

Remarks: The present species is very similar to *Malaconothrus yamamotoi* AOKI, 1994 and *Malaconothrus variosetosus* HAMMER, 1971, but is distinguishable from them by the characters shown in Table 1.

Table 1. Differential characters of the three related species of the genus *Malaconothrus*.

	M. variosetosus HAMMER, 1971	*M. yamamotoi* AOKI, 1994	*M. kiiensis* sp. nov.
Body length	300 μm	398 (407) 420 μm	405 (447) 470 μm
Body width	149 μm	180 (185) 195 μm	195 (224) 255 μm
Pedotectum I	angular	rounded	strongly angular
Length of lamellar seta	0.6×(*le-le*)*	0.8×(*le-le*)*	1.9×(*le-le*)
Length of interlamellar seta	0.4×(*in-in*)*	0.7×(*in-in*)*	1.0×(*in-in*)
Shape of lamellar seta	smooth	smooth	barbed
Notogastral setae	partly smooth (e_2, h_1, h_2, ps_3)	smooth	partly smooth (e_2, h_2)
The number of genital setae	6 pairs	5 pairs	5 pairs
Locality	Fiji	Japan	Japan

* Measurements were taken from the figures by HAMMER (1971) and AOKI (1994).

Trimalaconothrus magnilamellatus sp. nov.
(Figs. 9–15)

Measurement: Body length 635 (679) 710 μm; width 355 (385) 410 μm.

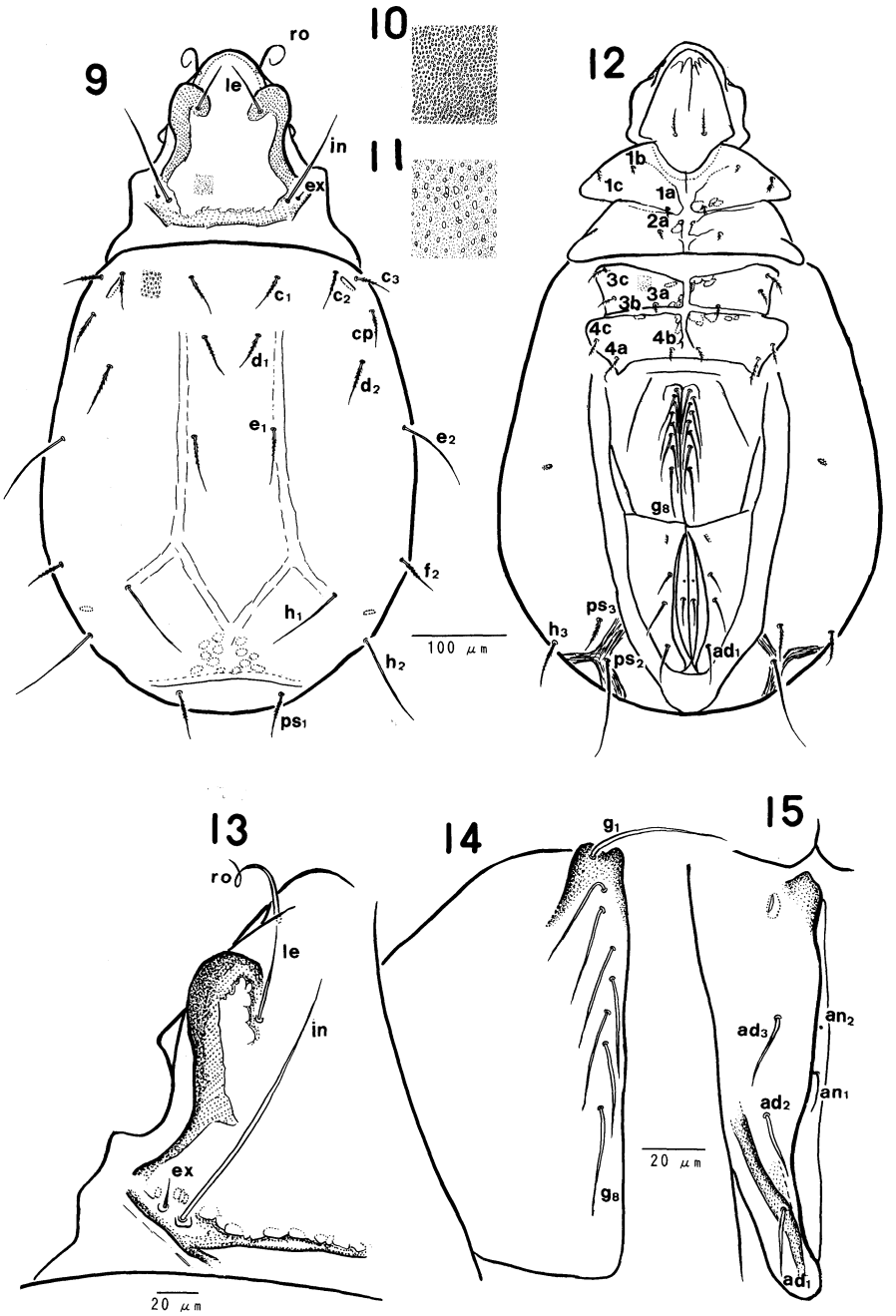
Prodorsum: Rostrum broadly rounded. Pedotectum I obtuse, rather rounded. Lamellar ridge S-shaped and very conspicuous. A weak transverse ridge situated between interlamellar setae. All prodorsal setae smooth and thin; rostral seta strongly curled; exobothridial seta very short; relative length and mutual distances of them as follows: $in > ro > le > ex$; $ro > (ro\text{-}ro)$; $le = (le\text{-}le)$; $in < (in\text{-}in)$; $ex < (ex - ex)$. Integument of prodorsum mimutely punctured.

Notogaster: Lateral side of notogaster gently swollen. Notogastral setae c_1, c_2, c_3, cp, d_1, d_2, e_1, f_2, h_3, ps_1 and ps_3 weakly barbed; the remaining setae e_2, h_1, h_2 and ps_2 smooth and thin. Relative lengths and mutual distances of notogastral setae as follows: $h_2 = ps_2 > e_2 = h_1 > d_2 = e_1 > f_2 = ps_1 > c_1 = c_2 = c_3 = cp = d_1 = ps_3 = h_3$; $(h_1\text{-}h_1) > (c_1\text{-}c_1) = (e_1\text{-}e_1) > (d_1\text{-}d_1)$; $(h_1\text{-}h_1) = 2.4 \times (c_1\text{-}c_1)$. Notogaster provided with parallel ridges running along and outside seta d_1 and e_1, bifurcating posteriorly, partly extending lateroposteriorly almost reaching seta h_1, partly extending medioposteriorly and uniting to form a V-shaped ridge; another transverse ridge found near the posterior end of notogaster just in front of setae ps_1, where notogaster shows a deep concavity. Some light spots found in posterior part of notogaster. Integument of notogaster finely foveolate.

Ventral side: Anogenital chaetotaxy 8-0-2-3. Anal plate provided with 2 setae; an_2 minute, hardly visible situated at a level a little posterior to ad_3; an_1 very conspicuous, as long as ad_3, situated at the same level of ad_2. Adanal plate provided with 3 setae. Genital plate provided with 8 long setae. All epimera separated. Setal formula of epimera: 3-1-3-3. All epimeral setae barbed and variable in length; *4a* longest, *3b*, *3c* and *4c* moderately long and the remainder very minute. Some light spots found in median part of epimera I–IV. Integument of epimera minutely punctured. Legs tridactyle; median claw shorter and thicker than the laterals.

Material examined: Holotype (NSMT-Ac 10733) and 5 paratypes (NSMT-Ac 10734–10738), from very wet moss near mountain stream in Ryujin-mura, Wakayama Prefecture. 28-III-1994, Y. YAMAMOTO. The holotype and 5 paratypes are deposited in the collection of National Science Museum, Tokyo.

Remarks: The present species is very similar to *Trimalaconothrus australis*



Figs. 9–15. *Trimalaconothrus magnilamellatus* sp. nov. —— 9. Dorsal view. 10. Integument of prodorsum. 11. Integument of notogaster. 12. Ventral view. 13. Prodorsum. 14. Genital plate. 15. Anal plate.

HAMMER, 1958 from Andes Mountains in Argentine and Bolivia, having conspicuous S-shaped lamellar ridges, but is distinguishable from this by 1) small body size, 2) notogastral setae partly barbed, 3) notogastral setae c_1 and c_2 long, 4) epimeral setae barbed, 5) genital plates with 8 pairs setae.

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摘　　要

和歌山県西牟婁郡すさみ町の琴の滝，滝壷周辺の照葉樹林下の湿った腐植土と，日高郡竜神村の渓流の近くに生育している非常に湿ったコケ類から，コナダニモドキ科の2新種を発見し、キイコナダニモドキ（新称）*Malaconothrus kiiensis* sp. nov.，およびケタブトコナダニモドキ（新称）*Trimalaconothrus magnilamellatus* sp. nov. と命名し記載した．前者はHAMMERが1971年にフィジー諸島から報告している *Malaconothrus variosetosus* とAOKIが1994年に箱根原生花園から報告しているヨシノリコナダニモドキ *Malaconothrus yamamotoi* に似ているものの，体が大きく，桁毛と桁間毛が長く，桁毛には毛羽がある点において相違しており新種とした。また，後者はHAMMERが1958年にアルゼンチン，ボリビアのアンデス山脈から報告している *Trimalaconothrus australis* に似ているものの，体が小さく，胴背毛の一部が毛羽だっており，C_1，C_2 が長く，基節板毛も毛羽だっており，性扉毛の数も8本と多いため新種とした．

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